

SYSTEM AND METHOD FOR CONTROLLING THE SIZE OF THE MOLTEN
POOL IN LASER-BASED ADDITIVE MANUFACTURING

ABSTRACT OF THE DISCLOSURE

5 According to one embodiment of the invention, a method for controlling the
size of the molten pool in a laser based additive manufacturing process includes
coaxially aligning an imaging device with a laser nozzle and imaging a molten pool,
created by a laser, on a substrate with the imaging device. The method further
includes comparing at least one characteristic of the molten pool with a respective
10 characteristic of a target molten pool, and adjusting, in substantially real-time, a laser
power of the laser based on the comparison in order to correlate the characteristic of
the molten pool with the respective characteristic of the target molten pool.